

Remarks

The present invention is a method of decoding a compression encoded video signal, a method of video encoding, a video encoder, a video decoder for decoding a compression encoded video signal and a video codec comprising an encode and decoder.

The Examiner's indication of the allowance of claims 1-6, 14, 16, 17, 36-39, 44, 47-48, 51, 52 and 54 and the objection to claims 10, 12, 41, 43, 45-46 and 53 is noted with appreciation.

Only claims drawn to a method of video encoding as recited in independent claim 7 and a video encoder as recited in claim 13 stand rejected.

The claimed method of video encoding and a video encoder in accordance with the invention receive an uncompressed video signal to be compression coded; data representing a first frame of the uncompressed video signal is encoded to form a compression encoded data; and part but not all of the data representing the first frame is repeated within compression encoded data subsequent to the first frame with the repeated part including a picture header data for the first frame. This methodology avoids the situation where the loss of a picture header can have severe effects on the decoding of the picture. See page 11, lines 21 *et seq.*, of the Specification.

Page 13, lines 14-30 through page 20, lines 1-13 of the Specification describe embodiments of an encoder in accordance with the present invention. The embodiments perform the claimed repeating part, but not all of the data representing the first frame within compression encoded data subsequent to the first frame with the repeated part including a picture header data for the first frame which obviates the problem of the prior art involving loss of headers as described above.

Claims 7-9, 11, 13, 40, 42 and 49-50 stand rejected under 35 USC §1.102 as being anticipated by Siracusa et al. It is noted that the Examiner's reference to USP 5,317,547 is incorrect since USP 5,317,547 to Oishi pertains to a time recorder. The rejection is responded to as if the Examiner meant to rely upon USP 5,289,276 (to Siracusa et al). These grounds of rejection are traversed for the following reasons.

Independent claim 7 recites:

"A method of video encoding comprising:
receiving an uncompressed video signal to be compression encoded;
encoding data representing a first frame of said uncompressed video signal to form compression encoded data; and
repeating part, but not all, of said data representing the first frame within compression encoded data subsequent to the first frame, said repeated part including picture header data for the first frame."

and independent claim 13 recites:

"A video encoder comprising:
an input for receiving an uncompressed video signal to be compression encoded;
means for compression encoding data representing a first frame of said uncompressed video signal to form compression encoded data;
the means for compression encoding data being arranged to repeat part, but not all, of said data representing the first frame within compression encoded data subsequent to the first frame, said repeated part including picture header data for the first frame."

Each of claims 7 and 13 require the sequence of receiving an uncompressed video signal to be compression encoded, compression encoding data representing a first frame of the uncompressed video signal to form compression encoded data and the compression encoding of data repeats part, but not all of the data representing the first frame within compression encoded data subsequent to the first frame with the repeated part including the picture header data for the first frame. It is therefore seen that the subject matter of rejected claims 7 and 13 pertains to an encoder receiving the input of an uncompressed video signal which is compressed as part of the encoding process.

Siracusa et al discloses a transport protocol arranged for hierarchically formatted compressed video data for robust transmission in noisy communication channels and apparatus for realizing a transport protocol. See column 2, lines 31-52.

Siracusa et al provide the transport protocol to improve the prior art MPEG protocol which is described in the background of the invention beginning in column 1, lines 13 *et seq.*. As is stated in column 1, lines 51 *et seq.* through column 2, the MPEG protocol uses a compression algorithm involving predicting frames of a video signal from prior frames of the video signal and transmitting in compressed form the differences between actual and predicted frames with successively encoded frames being dependent on the correctness of prior encoded frames. Moreover, Siracusa et al recognized that the MPEG protocol needed to be protected against propagation errors which were not included in the MPEG protocol. As a result in subsequent processing after MPEG encoding (as represented by the video MPEG encoder 10 in Fig. 6) the transport protocol of Siracusa et al is utilized to provide protection in noisy environment. The transport protocol, contrary to what the Examiner has stated, would not be understood by a person of ordinary skill in the art to be as recited in claim 7 to be a method of video encoding and to be a video encoder as recited in claim 13 since the prior art MPEG encoder represented by block 10 in Fig. 6 is utilized as the data source for the transport encoding utilizing the transport protocol of Siracusa et al.

Siracusa et al uses the transport protocol to add copies of MPEG headers which are produced by the MPEG encoder to provide the MPEG compressed video data packetized for transmission. Therefore, Siracusa et al do not constitute either a method of video encoding as recited in claim 7 or a video encoder as recited in claim 13. Therefore, none of the rejected claims are anticipated by Siracusa et al.

In this regard, the Examiner should note that both claims 7 and 13 recite receiving an uncompressed video signal to be compression encoded followed by encoding data representing a first frame of said uncompressed video signal to form compression encoded data and repeating part but not all of said data representing the first frame with compression encoded data subsequent to the first frame, said repeated part including picture header data for the first frame. This subject matter can only correspond to the function of the video MPEG encoder 10 of Fig. 6 which is the admitted prior art of Siracusa et al and does not perform the claimed repeating of picture headers.

A person of ordinary skill in the art would view Siracusa et al as a transport processor which solves the deficiencies of the MPEG encoding protocol to provide precautions against errors due to loss of data or corruption during transmission. The transport protocol adds copies of MPEG headers downstream from the encoding process and can not be considered by a person of ordinary skill to be an encoding process and instead should be considered transport protocol process which does not compress data and in fact expands the data as a result of adding MPEG headers.

In summary, a person of ordinary skill in the art would view Siracusa et al to not pertain to the claimed video encoding and therefor meets none of the limitations of claims 7 and 13. Furthermore, Siracusa et al operate after the uncompressed video signal, as recited in each of claims 7 and 13, has been compressed and effectively expands the previously compression encoded bit stream produced by the video MPEG encoder 10 to add redundant data therefor not involving the claimed compression.

Dependent claims 8, 9, 11, 40, 42, 49 and 50 further limit independent claims 7 and 13. These claims are also not anticipated for the reasons set forth above with

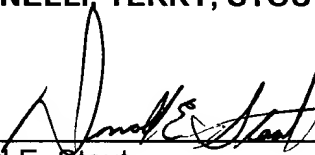
respect to the rejection of claims 7 and 13 as allegedly being anticipated by Siracusa et al.

The claims have been amended to improve their form for reexamination and to recite in independent claims 7 and 13 that the input is from an uncompressed video signal.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance is respectfully requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including Extension of Time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP, Dep. Acct. No. 01-2135 (367.38780x00), and please credit any excess fees to such deposit account.

Respectfully submitted,
ANTONELLI, TERRY, STOUT & KRAUS, LLP

A handwritten signature in black ink, appearing to read "Donald E. Stout", is written over a horizontal line.

Donald E. Stout
Reg. No. 26,422

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